

BABICH, L.V.

Methods of conducting practical training in general and
inorganic chemistry in the institutions of higher learning.
Uch.zap.MGPI no.225:228-232 '64.

(MIRA 18:12)

U S S R .

2

✓ Application of biochemical methods to the evaluation of media ingredients and biopreparations. M. A. Babich, *Trudy Gosudarst. Nauch.-Kontrol. Inst. Vet. Preparats* (Moscow) 4, 372-84 (1953).—Methods are suggested for the testing of peptone, gelatin, agar-agar, glycerol, formalin, HCHO, colloidal Al oxides, phenol, tribromophenol, and other media ingredients. Immune sera for anthrax, *Corynebacterium suis*, paratyphoid bovis, bivalent paratyphoid, *Escherichia coli* bovis, and normal serum as control were stored at 4, 18, 37, and 38° and tested every 3 months for their amino acid content. At 4° no proteolysis and no change in the amino acids were found. At the other temps. proteolysis occurred, increasing in intensity with the temp. No tests appear to have been made for the preservation of the immunological properties of the sera. B. S. Levine

17/1/54

BABICH, M. [M.]

IVANOV, M., professor; ~~BABICH, M.~~ professor; THERENT'YEV, F., professor;
SYURIN, V., kandidat veterinarnykh nauk

1. Practical value of G.M.Boshian's discovery. Zhur.mikrobiol.
epid. i immun. no.11:115-120 N '54. (MLRA 8:1)
(VIRUSES,
conversion into bact.)
(BACTERIA,
conversion into viruses)

"APPROVED FOR RELEASE: 06/06/2000

CIA-RDP86-00513R000102820016-1

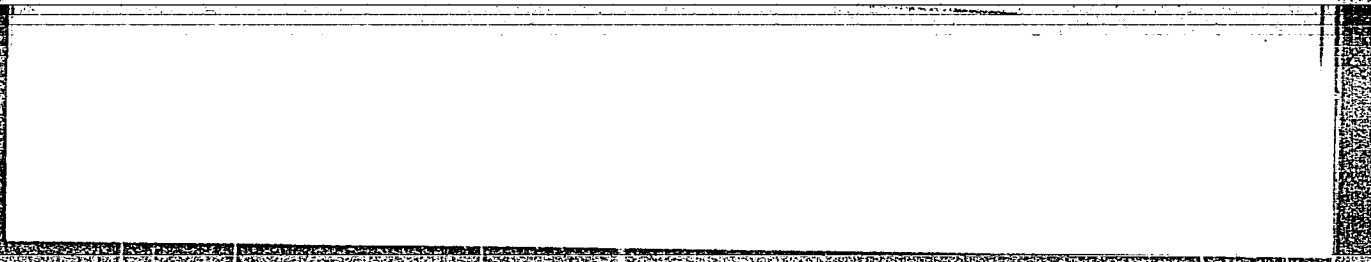
13A B7C H, M. A.

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2000 11 11
USSR/Microbiology - Microorganisms Pathogenic to
Humans and Animals.

F-5

Abs Jour : Ref Zhur - Biol., No 4, 1958, 14860

Author : Babich, M.A., Plotnikova, V.A.

Inst : -

Title : New Nutrient Media for Culturing Strains Producing
Tuberculosis.

Orig Pub : Tr. Gos. nauchno-kontroln. in-ta po vetpreparatam, 1956,
6, 173-180.

Abstract : Formulae are given for nutrient media with potato ex-
tracts and ammonium oxalate for cultivation of strains
producing tuberculosis used in manufacture of different
biological preparations, particularly tuberculin. The
media suggested are advantageously economical.

Card 1/1

USSR / Microbiology. General Problems. Method and F-1
Technique of Investigation.

Abs Jour: Ref Zhur-Biol., 1958, No 17, 76589.

Author : Babich, M. A.; Plotnikova, V. A.; Levina, I. G.
Inst : State Scientific Control Institute of Veterinary
Preparation:
Title : Use of Dry Nutritional Mediums for Cultivation of
Brucella.

Orig Pub: Tr. Gos. nauchnokontrol'n. in-ta vet. preparatov.
1957, 7, 57-62.

Abstract: No abstract.

Card 1/1

Бабич М.А.
BABICH, M.A., kandidat biologicheskikh nauk.

Comparative quality rating of biopreparations on hydrolysate and
other culture media. Trudy Gos.nauch.-kont.inst.vet.prep. 4:394-
408 '53. (MLRA 7:10)
(Bacteriology--Cultures and culture media)

SOLODKOVA, N.O., kand. sel'khoz. nauk; KHRAMOV, I.M.; BELOZOROVA, E.
[Bilozorova, IE.I.]; CHEREDNIKOVA, V.S.; GUBA, P.O. [Haba, P.O.];
BABICH, I.A. [Babych, I.A.], kand. sel'khoz. nauk; BOYKO, A.K.
[Boiko, A.K.], kand. veter. nauk; GONCHARENKO, F.I. [Honcharenko,
F.I.], kand. biol. nauk; KHRYASHCHEVSKIY, V.M. [Khriashchevs'kyi,
V.M.], red.; CHEREVATSKIY, S.A. [Cherevats'kyi, S.A.], tekhn.
red.

[Concise manual for the beekeeper] Korotkyi dovidnyk pasich-
nika. Kyiv, Derzh. vyd-vo sil's'khhospodars'koi lit-ry URSR,
1961. 164 p. (MIRA 15:1)

(Bee culture—Handbooks, manuals, etc.)

LIKHACHEV, N.V., prof.; AGRINSKIY, N.I., prof.; SYURIN, V.N., prof.;
SPESIVTSEVA, N.A., prof.; KOLOBOLOTSKIY, G.V., prof.;
ZOLOTAREV, N.A., prof.; KORYAZHNOV, V.P., prof.; KOLESOV,
S.G., prof.; BABICH, M.A., prof.; PETROV, A.M., prof.; ZOTOV,
A.P., prof.; DOROFEEV, K.A., prof.; POLYKOVSKIY, M.D., prof.;
SOLOMKIN, P.S., prof.; ORLOV, Ye.S., prof.; KOTOV, V.T., prof.;
TRILENKO, P.A., prof.; LYUBASHENKO, S.Ya., prof.; USACHEVA,
I.G., red.; YARNYKH, A.M., red.; BALLOD, A.I., tekhn. red.

[Veterinary laboratory practice] Veterinarnaia laboratornaia
praktika. Moskva, Sel'khozizdat. Vol.[General microbiological
methods of investigation] Obshchie mikrobiologicheskie metody is-
sledovaniia. 1963. 566 p. Vol.2. [Biochemical, chemico-
toxicological, and veterinary hygienic methods of investigation]
Biokhimicheskie, khimiko-toksikologicheskie i zoogigienicheskie
metody issledovaniia. 1963. 431 p. (MIRA 16:8)

(Veterinary laboratories)

VELIKORETSKIY, D.A.; LORIYE, K.M.; FINKEL', I.I.; GRIGORCHUK, Yu.F.;
 BERGER, L.Kh.; UTROBINA, V.V.; KHARCHENKO, V.P.; MESHCHERYKOV, A.V.,
 student V kursa; OBEREMCHENKO, Ya.V., kand.med.nauk; NIKITIN, A.V.;
 MUKHOYEDOVA, S.N.; KUSMARTSEVA, L.V., assistant; KUZNETSOV, V.A.,
 dotsent; KUKHTINOVA, R.A., assistant; BONDARENKO, Ya.D. (g. Fastov);
 KURTASOVA, L.V. (g. Fastov); PEVCHIKH, V.V.; CHURAKOVA, A.Ye.;
 BABICH, M.M.; KUZ'MIN, K.P.; PAVLOV, S.S.; SHEVLYAKOV, L.V., kand.
 med.nauk; IGNAT'YEVA, O.M.; ZEYGERMAKHER, G.A.; GUTKIN, A.A.;
 POLYKOVSKIY, T.S.

Resumes. Sov.med. 25 no.11:147-152 N '61.

(MIRA 15:5)

1. Iz Instituta grudnoy khirurgii AMN SSSR (for Velikoretskiy, Loriye, Finkel').
2. Iz bol'nitsy No.3 Gorlovki Stalinskoy oblasti (for Grigorchuk).
3. Iz Tyumenskoy oblastnoy bol'nitsy (for Berger, Utrobina).
4. Iz Karatasskoy rayonnoy bol'nitsy Yuzhno-Kazakhstanskoy oblasti (for Kharchenko).
5. Iz Gospital'noy khirurgicheskoy kliniki I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova (for Meshcheryakov).
6. Iz kliniki propedevticheskoy terapii Stalinskogo meditsinskogo instituta na baze oblastnoy klinicheskoy bol'nitsy imeni Kalinina (for Oberemchenko).
7. Iz kliniki gospital'noy terapii Voronezhskogo meditsinskogo instituta (for Nikitin, Mukhoyedova).
8. Iz kafedry obshchey khirurgii Kishinveskogo meditsinskogo instituta (for Kusmartseva).

(Continued on next card)

VELIKORETSKIY, D.A.---(continued) Card 2.

9. Iz akushersko-ginekologicheskoy kliniki Stalinskogo meditsinskogo instituta na baze bol'nitsy imeni Kalinina (for Kuznetsov, Kukhtinova).
10. Iz gosspital'noy terapevticheskoy kliniki Izhevskogo meditsinskogo instituta (for Pevchikh, Churakova). 11. Iz Nosovskoy rayonnoy bol'nitsy Chernigovskoy oblasti (for Babich). 12. Iz Vyborgskoy mezhrayonnoy bol'nitsy (for Pavlov). 13. Iz 1-y gorodskoy bol'nitsy Tyumoni (for Ignat'yeva). 14. Iz 2-y infektsionnoy bol'nitsy g. Zaporozh'ya (for Zeygermakher). 15. Iz infektsionnogo i prozektorskogo otdeleniy Petrozavodskoy gorodskoy bol'nitsy (for Gutkin, Polykovskiy).

(MEDICINE--ABSTRACTS)

BABICH, M.M. (Nosovka, Chernigovskoy oblasti)

Use of ACTH and prednisolone in diseases of the nervous
system. Vrach. delo no.11:149 N°63 (MIRA 16:12)

TRET'YAKOV, Vsevolod Ivanovich. Prinimali uchastiye: CHAPOROVA, I.N.,
kand. tekhn. nauk; KOVAL'SKIY, A.Ye., kand. khim. nauk;
BARANOV, A.I., inzh.; MEYERSON, G.A., prof., doktor tekhn.
nauk, retsenzent; IVENSEN, V.A., kand. tekhn. nauk, retsenzent;
BABICH, M.M., inzh., retsenzent; OL'KHOV, I.I., red.; MISHARINA,
K.D., red. izd-va; DOBUZHINSKAYA, L.V., tekhn. red.

[Ceramic-metal hard alloys; physicochemical principles of their
production, properties and fields of use] Metallokeramicheskie
tverdye splavy; fiziko-khimicheskie osnovy proizvodstva,
svoistva i oblasti primeneniia. Moskva, Gos.nauchno-tekhn.izd-
vo lit-ry po chernoi i tsvetnoi metallurgii, 1962. 592 p.

(MIRA 15:1)

(Ceramic metals)

BAKUL', V.N., kand. tekhn. nauk. ZAKHARENKO, I.P., kand. tekhn. nauk;
BABICH, M.M., kand. tekhn. nauk; NAKUL, I.S., kand. tekhn. nauk;
DUBITSKAYA, I.S., kand. tekhn. nauk

Hard-alloy taps. Mashinostroitel' no.12:15-16 D '65.
(MIRA 18.12)

BABICH, N.

From the experimental work in a continuous butter-making process. Molochnaya
Prom. 14, No.7, 39-41 '53. (MLRA 6:6)
(CA 47 no.22:12679 '53)

BABICH, N.

Promote the role of local sections of societies. NTO no.10:22-24
O '59. (MIRA 13:2)

1. Predsedatel' Ukrainskogo respublikanskogo soveta nauchno-tekhnicheskikh
obshchestv, zamestitel' predsedatelya Gosplana USSR.
(Research, Industrial)

BABICH, N. starshiy inzhener

Miracle dye. Mest.prom.1 khud.promys. 3 no.3:23 Mr '62.
(MIRA 15:3)

1. Proizvodstvennyy otdel obl'mestproma, g. Donetsk.
(Dyes and dyeing)

L 16359-65 ESD(dp)/SSD/BSO/AFWL/ASD(a)-5/AFMD(p)/AFATR/AFTC(b)/AFTC(p)

ACCESSION NR: AT4045650

S/2943/64/000/002/0318/0325

AUTHOR: Babich, N. P.

TITLE: Regulated linear electronic resistance

SOURCE: Seminar po metodam matematicheskogo modelirovaniya i teorii elektricheskikh tsepey. Matematicheskoye modelirovaniye i elektricheskiye tsepi (Mathematical modeling and electrical circuits). trudy seminar, no. 2. Kiev, Izd-vo Naukova dumka, 1964, 318-325

TOPIC TAGS: regulated linear electronic resistance, inertia free resistance regulator, transistor, diode, analog computer, electronic resistance

ABSTRACT: The electromechanical regulation of the resistances used in analog computers have a considerable inertia. The author considers the possibility of regulating linear resistors by purely electronic means, with transistors and tubes. An electronic diode is suggested the volt-ampere characteristics of which is linear in the whole range of the input voltage, dc or ac, and the resistance of which

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ACCESSION NR: AT4045650

is given by the regulating voltage V_r , that is

$$V_{imp} / I_{imp} = R_{el. reg.} = \text{const.}, \text{ with } V_r = \text{const.}$$

The principle is used of the simultaneous action of the input voltage on the collector-emitter of the transistor and of the current which is proportional to the input voltage, on the transistor base. This produces a linear volt-ampere characteristics of the diode. The stability of the resistor at 20°C is satisfactory. Orig art. has: 6 figures, 8 equations

ASSOCIATION: None

SUBMITTED: 05Apr62

ENCL: 00

SUB CODE: DP, EC

NO REF SOV: 005

OTHER: 000

Card2/2

1. 44343-66

ACC NR: AT6009818

SOURCE CODE: UR/0000/65/000/000/0314/0317

AUTHOR: Babich, N. P.

ORG: none

54
21

TITLE: A transistorized circuit with a controlled voltage transmission coefficient

SOURCE: Seminar po metodam matematicheskogo modelirovaniya i teorii elektricheskikh tsepey. Matematicheskoye modelirovaniye i teoriya elektricheskikh tsepey (Mathematical modeling and the theory of electrical circuits); trudy seminar, no. 3, Kiev, Naukova dumka, 1965, 314-317

TOPIC TAGS: control circuit, electronic circuit, transistorized circuit, circuit design, transistor, diode, voltage regulator / P25B ~~high voltage~~ transistor, D2E diode, D101A diode

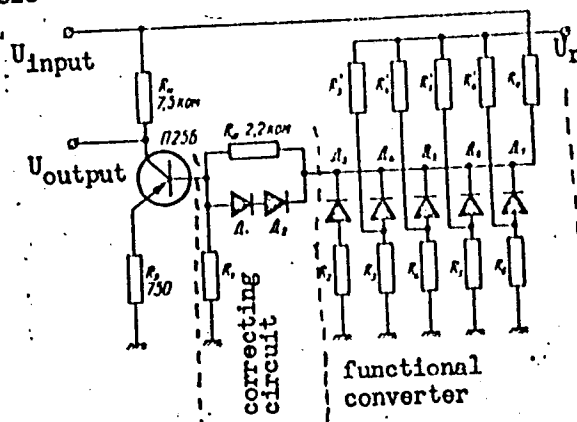
ABSTRACT: A circuit with a regulated voltage transmission coefficient has been designed for use with a P25B high voltage transistor (see Fig. 1). The circuit is based on transistor control by a functional converter circuit using diodes with a variable reference bias. Because converters using diodes with a variable bias were proposed for analog formation of a class of functions which can be represented by a family of isoclinic lines, it is not possible to reproduce directly the required linear transmission function. It is possible to construct a series of functions which can be corrected by nonlinear elements. In calculating the parameters

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L 44343-66

ACC NR: AT6009818

Fig. 1.



for the functional converter circuit using D2E diodes, a six-step approximation is used with a ten-fold attenuation of the input. The linearizing circuit uses D101A diodes. The voltage transmission coefficient is controlled by the reference voltage (U_r). Tests showed the range of change of the voltage transmission coefficient to be 12 decibels. The nonlinearity of the characteristic for the input voltages 2—25 v is 2—4%. Further development of the circuit requires graphic calculation of the converter correcting circuit. Orig. art. has: 3 figures and 7 equations.

SUB CODE: 09/ SUBM DATE: 19Jun64/ ORIG REF: 002/ OTH REF: 001

Cont 2/2 blg

AUTHOR: Vsekhsvyatskiy, S.K., Babich, O.I. and 33-35-3-16/27
Kazyutinskiy, V.V.

TITLE: On the Question Concerning the Capture Hypothesis of the
Formation of Short-Periodic Comets (K voprosu o gipoteze
obrazovaniya kometkoperiodicheskikh komet putem zakhvata)

PERIODICAL: Astronomicheskii zhurnal, 1958, Vol 35, Nr 3, pp 473-478 (USSR)

ABSTRACT: The present paper has a polemic character. Starting from the
capture hypothesis Shteyns [Ref 7] tried in 1957 to explain the
absence of retrograde motions for short-periodic comets by
their disintegration and obtained results contradictory to
Newton's well-known results [Ref 8]. These contradictory re-
sults cause the authors to investigate the distribution of the
captured orbits in the plane of the Jupiter orbit. It was sup-
posed: A circular orbit for Jupiter, disturbances by the sun
and other planets can be neglected etc. The method of Laplace
(transition to the planeto-central motion) was used. The cal-
culation of 216 orbits showed:

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On the Question Concerning the Capture Hypothesis
of the Formation of Short-Periodic Comets

33-35-3-16/27

parabolas $e = 0,96 - 1,05$	hyperbolas $e > 1,05$	ellipses $e < 0,98$
140	37	39
among them in the zone of visibility ($q = a(1-e) < 3$)		
103	18	14
among them with direct motion		
49	15	11
among them with retrograde motion		
54	3	3

The authors use this table and the conclusions resulting from it in order to disprove the conclusions of Shteyns and simultaneously to prove the instability of the capture hypothesis (if this were true, then there must occur at least 10 short-periodic comets with retrograde motion in the Jupiter family, which is not the case as is well-known; a number of further similar arguments are presented). Finally the authors point to an oversight in the elaborations

Card 2/3

On the Question Concerning the Capture Hypothesis
of the Formation of Short-Periodic Comets

33-35-3-16/27

of Shteyns.

There are 2 tables, 1 figure, and 11 references, 7 of which are Soviet, 1 Polish, 2 English, and 1 American.

ASSOCIATION: Kafedra astronomii Kiyevskogo gosudarstvennogo universiteta
(Chair of Astronomy at the Kiev State University)

SUBMITTED: January 25, 1958

Card 3/3

13.25/10

25755
S/024/61/000/001/009/014
E031/E113

AUTHOR: Babich, O.A. (Moscow)

TITLE: On the theory of the gyroscopic orienting device of the type "gyro-horizon compass"

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1961, No.1, pp.156-163

TEXT: The theory of the orienting device and a method of constructing a system based on it are discussed. The problem of evaluating the accuracy with which position is determined because of instrumental errors in the components of the system is not investigated but an electromechanical system is considered under the assumption that all its parameters correspond exactly to their theoretical values and that there are no technological errors. To exclude the influence of the thrust the accelerometer must be placed on a horizontal platform. To measure the horizontal accelerations, two accelerometers are fixed in the horizontal plane with their axes of sensitivity at right angles and oriented with respect to the direction of the light. A number of methods of orienting the platform are possible, all involving control in Card 1/4

On the theory of the gyroscopic ²⁵⁷⁵⁵
S/024/61/000/001/009/014
E031/E113

azimuth by a free gyroscope. Using the gyrocompass effect the influence of disturbing forces on the accuracy of orientation can be reduced. Consider the problem of determining the position of an object in motion at a constant distance from the centre of the earth using an orienting device of the gyro-horizon compass type. A platform is attached to the object by a Cardan suspension and contains two gyroscopes. A correcting moment is applied to the casing of the second gyroscope so that the plane of its outer ring is always perpendicular to the plane of the outer ring of the first gyroscope. Conditions are imposed to make the first gyroscope a gyrocompass and a condition is imposed on the second gyroscope such that, for zero initial conditions, its axis is in the direction of absolute horizontal velocity. Consider small motions of a stabilised platform with the assumption that initially its plane coincides with that of the horizon while it is inclined at some angle to the azimuth. Ignoring the motion of the platform caused by nutation of the gyroscopes, expressions are obtained for the components of the angular velocity of the platform with respect to a system of coordinates rigidly attached to it. These expressions may be simplified by assuming the

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X

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EO31/E113

On the theory of the gyroscopic...

Eulerian angles to be small. Equating these to the values as determined from known moments applied to the gyroscopes, a system of differential equations for the Eulerian angles is obtained. The solution for the case when the velocity of the object is small compared with the first cosmic velocity is quoted. The system executes simple harmonic motion about the zero position of equilibrium. The solution is much simpler if the angular velocity of the object is constant. By considering the characteristic equation in general of the system it is seen that the amplitude of the oscillations depends only on the initial deviation of the system from the position of equilibrium. For the case of motion in an orbit the characteristic equation is much simpler. The characteristic equation for the case of motion at a velocity small compared with the first cosmic velocity is discussed. A gyro-orienting device of the gyrocompass type has no systematic rotational errors. This is shown to be true in two cases only, the first of which corresponds to the gyrocompass type of platform and the second to a platform which is free in azimuth. A gyro-platform for an orientator of this type requires only two gyroscopes.

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25755

S/024/61/000/001/009/014

E031/E113

On the theory of the gyroscopic....

Acknowledgements are expressed to G.O. Fridlender for his advice.
There are 4 figures and 3 Soviet references.

SUBMITTED: July 19, 1960

Card 4/4

BABICH, P. P.

SOV/137-58-11 22143

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 45 (USSR)

AUTHORS: Sorokin, P. Ya., Zabaykin, A. V., Babich, P. P., Zakharov, O. A.

TITLE: Continuous Measurement of the Temperature of Liquid Steel in the Ladle (Nepreryvnyy zamer temperatury zhidkoy stali v kovshe)

PERIODICAL: Prom-ekon. byul. Sov. nar. kh-vu Sverdl. ekon. adm. r-na, 1958, Nr 4, pp 3-6

ABSTRACT: The measurements are made in ladles of 30-45 t capacity by Pt/Ph-Pt thermocouple introduced into the ladle either by a dummy stopper from above or through the nozzle of the spare pouring aperture in the bottom of the ladle. The thermocouple junction is protected by covers made on a Zr-oxide base and are installed at 200-300 mm from the ladle bottom. The experiments conducted showed the temperature of the metal (Me) in the ladle, when under an adequate layer of slag, drops not at a gradient of 2-3°C/min, as had previously been held, but considerably more slowly. The method of continuous measurement of the temperature of the liquid steel makes it possible to determine the length of time during which the Me should be held in the ladle after the heat has been tapped, and this facilitates purification from nonmetallic

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SOV/137-58-11-22143

Continuous Measurement of the Temperature of Liquid Steel in the Ladle
and gas inclusions.

V. G.

Card 2/2

8(4)

AUTHORS:

SOV/32-24-12-21/45
Sorokin, P. Ye., Zabaykin, A. V., Babushkin, P., Zakharenko, G.A.

TITLE:

Continuous Measurement of the Temperature of Molten Steel in the Ladle (Neprezyvnyy zamer temperatury zhidkoy stali v kovahe)

PERIODICAL:

Zavodskaya Laboratoriya, 1958, Vol 24, No 12, pp 1475-1477 (USSR)

ABSTRACT:

Immersion thermoelements give better results than optical apparatus in the measurement of the temperature of molten metals. From 1952 to 1954 continuous temperature measurements were carried out in liquid steel still in ladles holding 30-45 tons by the institute mentioned in the Association in collaboration with Ural'skiy vagonostroitel'nyy zavod (Ural Car-Building Plant) and Zavod transportnoy mashinostroyeniya v Chelyabinske (Transport Machine-Building Plant in Chelyabinsk). The thickness of the lining of the ladles used was 200 mm (walls) and 350 mm (floor). In one case the thermoelement was mounted as a pseudo seal (Fig 1), while in another case it was introduced through the outlet (Fig 2). The experimental results obtained (Figs 3-5) indicate the following: the

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Continuous Measurement of the Temperature of Molten Steel in the Ladle

SOV/32-24-12-21/45

temperature of the liquid metal becomes stable at a particular level after 15 minutes (curve of the figure). During the casting process the temperature of the liquid metal increases slowly in the case where a slag layer of 200-250 mm thick is present, or remains constant in the case where the slag layer is thinner. Contrary to wide-spread opinion, the temperature of the metal increases at the end of the casting process, and this finding agrees with the work of Van Grynunvigen and Lauter (Ref 2), Pronov (Ref 3), Grczin (Ref 4), and Boos and Vil'yams (Ref 5). The temperatures determined using optical pyrometers are always lower than those obtained using thermoelements. The temperatures in the upper metal layers are greater than in the lower layers (Figs 3,4). There are 5 figures and 5 Soviet references.

ASSOCIATION: Institut Metallurgii Ural'skogo filiala Akademii nauk SSSR
(Institute of Metallurgy of the Ural Branch, Academy of Sciences, USSR)

Card 2/2

MEL'NIKOV, L.M., inzh.; BABICH, P.P., inzh.; BUDENIYY, V.D., inzh.;
LIRMAN, A.M., inzh.

Dependence of steel smelting processes on heat transmission in
open-hearth furnaces. Trudy Ural. politekh. inst. no. 91:47-55 '60.
(MIRA 14:2)

(Open-hearth process) (Heat--Transmission)

BARRETT

PHASE I BOOK EXPLOITATION

BOV/5556

SJ-

Moscow. Institut stali.

Novoye v teorii i praktike proizvodstva martenovskoy stali (New [Developments] in the Theory and Practice of Open-Hearth Steelmaking) Moscow, Metallurgizdat, 1961. 439 p. (Series: Trudy Mezvuzovskogo nauchnogo soveshchaniya) 2,150 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy institut stali imeni I. V. Stalina.

Eds.: M. A. Glinkov, Professor, Doctor of Technical Sciences, V. V. Kondakov, Professor, Doctor of Technical Sciences, V. A. Kudrin, Docent, Candidate of Technical Sciences, G. N. Oyks, Professor, Doctor of Technical Sciences, and V. I. Yavovskiy, Professor, Doctor of Technical Sciences; Ed.: Ye. A. Borko; Ed. of Publishing House: N. D. Gromov; Tech. Ed.: A. I. Karasev.

PURPOSE: This collection of articles is intended for members of scientific institutions, faculty members of schools of higher education, engineers concerned with metallurgical processes and physical chemistry, and students specializing in these fields.

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New [Developments] in the Theory (Cont.)

80V/5556

COVERAGE: The collection contains papers reviewing the development of open-hearth steelmaking theory and practice. The papers, written by staff members of schools of higher education, scientific research institutes, and main laboratories of metallurgical plants, were presented and discussed at the Scientific Conference of Schools of Higher Education. The following topics are considered: the kinetics and mechanism of carbon oxidation; the process of slag formation in open-hearth furnaces using in the charge either ore-lime briquets or composite flux (the product of calcining the mixture of lime with bauxite); the behavior of hydrogen in the open-hearth bath; metal desulfurization processes; the control of the open-hearth thermal melting regime and its automation; heat-engineering problems in large-capacity furnaces; aerodynamic properties of fuel gases and their flow in the furnace combustion chamber; and the improvement of high-alloy steel quality through the utilization of vacuum and natural gases. The following persons took part in the discussion of the papers at the Conference: S.I. Filippov, V.A. Kudrin, M.A. Glinkov, B.P. Nam, V.I. Yavovskiy, G.N. Oyke and Ye. V. Chelishchev (Moscow Steel Institute); Ye. A. Kazachkov and A. S. Kharitonov (Zhdanov Metallurgical Institute); N.S. Mikhaylets (Institute of Chemical Metallurgy of the Siberian Branch of the Academy of Sciences USSR); A.I. Stroganov and D. Ya. Povolotskiy (Chelyabinsk Polytechnic Institute); P.V. Umrikhin (Ural Polytechnic Institute); I.I. Pomin (the Moscow "Serp i molot" Metallurgical Plant); V.A. Fuklov (Central Asian Polytechnic Institute).

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New [Developments] in the Theory (Cont.)

80V/5556

84

and M.I. Beylinov (Night School of the Dneprodzerzhinsk Metallurgical Institute).
References follow some of the articles. There are 268 references, mostly Soviet.

TABLE OF CONTENTS:

Foreword

5

Yavovskiy, V. I. [Moskovskiy institut stali - Moscow Steel Institute].
Principal Trends in the Development of Scientific Research in Steel
Manufacturing

7

Filippov, S. I. [Professor, Doctor of Technical Sciences, Moscow Steel
Institute]. Regularity Patterns of the Kinetics of Carbon Oxidation
in Metals With Low Carbon Content

15

[V. I. Antonenko participated in the experiments.]

Levin, S. L. [Professor, Doctor of Technical Sciences, Dnepropetrovskiy
metallurgicheskiy institut - Dnepropetrovsk Metallurgical Institute].

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New [Developments] in the Theory (Cont.)

SOV/5556

Kapustin, Ye. A. [Docent, Candidate of Technical Sciences, Zhdanov Metallurgical Institute]. Aerodynamic Properties of Fuel Gases and Their Flow in the Combustion Chamber of an Open-Hearth Furnace

271

Kudrin, V.A. [Docent, Candidate of Technical Sciences], O.N. Oyka, O.D. Petronko, A.A. Yudson, Yu. M. Nechkin, B.P. Nam, [Engineers], I.I. Ansholes [Docent, Candidate of Technical Sciences], R.M. Ivanov [Candidate of Technical Sciences], and V.P. Adrianova [Engineer]. Special Features of Making High-Quality Steel in Natural-Gas-Fired Open-Hearth Furnaces

280

Butakov, D.K. [Docent], L.M. Mel'nikov [Engineer], A.M. Lirman, V.D. Budenny, P.P. Babich, and A.I. Sinkovich [Ural Polytechnic Institute, Zavod im. Ordzhonikidze Chelyabinskogo sovnarkhoza - Plant imeni Ordzhonikidze of the Chelyabinsk Sovnarkhoz]. Special Features of Making Steel in Open-Hearth Furnaces With Magnesite-Chromite [Brick] Roofs

290

Kudrin, V.A., Yu. M. Nechkin, Ye. I. Tyurin [Candidate of Technical Sciences], and Ye. V. Abrosimov [Moscow Steel Institute]. The Acid Open-Hearth Process

299

Card 10/14

L 17765-63 EWT(d)/FCG(w)/BDS ASD/ESD-3/APGC/IJP(C) Pg-4/Pk-4/Po-4/Pq-4 GG
ACCESSION NR: AT3001882 S/2906/62/000/000/0150/0160

AUTHORS: Babich, R. Kh., Lunin, V. V. 75

TITLE: Multichannel voltage-to-digital-code and code-to-voltage translator with
semiconductor triodes 16C

SOURCE: Kombinirovannyye vychislitel'nyye mashiny; trudy II Vsesoyuznoy
konferentsii-seminara po teorii i metodam matematicheskogo modelirovaniya,
Moscow, Izd-vo AN SSSR, 1962, 150-160

TOPIC TAGS: computer, translator, digit, digital, code, voltage, multichannel,
semiconductor, triode, register

ABSTRACT: This paper explains the theory of and reports experimental results
with a multi-channel voltage-to-digital-code and code-to-voltage translator (T)
employing semiconductor triodes. The T is intended for the connection of a digital
integrating machine with the control object. The object contains transducers, the
readings of which serve as an input into the control machine. The data in this
machine are introduced not in their total value, but in the form of increments ob-
tained during the time interval between the given and the last antecedent iteration.
A block diagram is shown. The numerical code formed in the preceding iteration

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ACCESSION NR: AT3001882

is stored in the memory. Upon retrieval from the memory the code enters the code-to-voltage T (CVT). The voltage corresponding to the given quantity y enters a comparison circuit C; the other input of that circuit receives a voltage that is proportional to the output signal, y^* , of a transducer acting at the given moment. Depending on the sign of the difference $y^* - y$ at the output of the comparison circuit, signals will be generated that have either the value +1, 0, or -1. Following the determination of the sign of the difference, the output signal of the comparison circuit and the content of a register 3 enter at the inlet of the single-digit summator. The code of the number y^* obtained at the output of the summator is placed into register 1 and is recorded in the memory at the same address at which the code of y had been delivered. Thereupon the read-out of the code y corresponding to the next input channel, the elaboration of the new increment, the obtainment of the magnitude of y^* , its recording in the memory, etc., continue. A commutator serves for the switching of the transducer voltages of the input channels at the input of the comparison circuits. The commutator is controlled from the control block of the machine and switches the transducer voltages synchronously with the switching of the memory addresses at which the respective values of the input quantities are stored. The paper explains and illustrates the selection of the operating principles and the structural scheme of the voltage-to-code T, the selection of the circuit for the electronic voltage divider, the method of compensation for

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the errors due to the nonideal performance of the "rough-stage" switches (nonzero direct, finite reverse resistance), the selection of the circuit and error evaluation of the precision systems, the transducer commutator and the voltage-comparison circuits, and the T-control circuitry. The T constructed according to the scheme described here has 12 binary digits; the total error does not exceed 0.05% and comprises a 0.01% error due to nonidentity of the commutator switches, a 0.02% error due to the reverse resistance of the commutator switches, and a 0.02% error due to the triode-parameter scatter. 32 input transducers were used; the speed of the scheme is illustrated by a 10-microsec time lapse between 2 inquiries. The use of higher-voltage triodes would reduce the errors. The device employs 64 semiconductor triodes for the rough stage, 32 for the precision stage, 15 for the control of the 2 stages, 96 for the input-data commutator, and 12 for the null amplifier. Orig. art. contains 11 figures and 4 numbered equations.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 11Apr63

ENCL: 00

SUB CODE: CP, MM

NO REF SOV: 000

OTHER: 000

Card 3/3

RABICH, Raisa Maksimovna; BIRUKOV, G.F., red. izd-va; FOSS, Yu.A.,
tekhn. red.

[Plastics in construction] Plastmassy v stroitel'stve. Vo-
ronezh, Izd-vo Voronezhskogo univ., 1961. 54 p.

(Plastics)

(Building materials)

(MIRA 15:4)

BABICHEV, N.S., kand.tekhn.nauk

Guides for miners ("Guide for miners working in building shafts,
shaft bottoms and chambers" by R.A. Tiurkian and others, "Guide
for miners working in passageways" by S.F. Mogil'nikov. Bezop.
truda v prom. 5 no. 5:36 My '61. (MIRA 14:5)
(Mining engineering) (Tiurkian, R.A.) (Mogil'nikov, S.F.)

BABICHEV, S.I., dotsent; PETROV, V.I., kand.med.nauk; MIKHALCHENKO, V.A.

Dynamic study of oscillography in patients with mitral stenosis.
Khirurgiiia 36 no.9:81-86 S '60. (MIRA 13:11)

1. Iz gosptal'noy khirurgicheskoy kliniki (zav. - zaslushennyy
deyatel' nauki prof. B.V. Petrovskiy) i Moskovskogo ordena Lenina
meditsinskogo instituta imeni I.M. Sechenova i Tsentral'nogo
instituta rentgenologii i radiologii (dir. - prof. I.G. Logunova)
Ministerstva zdavookhraneniya RSFSR.
(MITRAL VALVE--DISEASES) (OSCILLOGRAPHY)

<p>1. <u>BAKICH, S. (Kh.)</u> CA</p>		<p>PROCESSES AND PROPERTIES INDEX</p>	
<p>Complex compounds of alkaloids with potassium-mercury iodide. I. Products of reaction of strychnine with Mayer's reagent. S. Babich. J. Gen. Chem. (U. S. S. R.) 11, 839-43 (1941).—B. Studied the conditions under which it is possible to ppt. strychnine by Mayer's reagent (1.35 g. HgCl₂, 4.98 g. KI in 100 cc. H₂O) under controlled conditions with ppts. of constant compn. The reagent itself was first investigated and was found to possess HgI₂ ion in the complex. An analytical method was developed for detn. of the reagent, by using essentially Fellenberg's method (C. A. 24, 1817, 5322). The detn. of the conditions for complete pptn. of alkaloids by the reagent was made by using 1% soln. of strychnine nitrate; 1 cc. of this soln. was treated with 1 cc. 1% H₂SO₄, followed by increasing amts. of Mayer's reagent (0.1 N); the ppt. was filtered and the amt. of unbound Mayer's reagent in the filtrate was detd. It was found that for complete pptn. of strychnine at least 3 molar equivs. of the reagent are necessary. Analysis of the ppt. indicated its compn. as strychnine.HgI₂.H₂O. Apparently, it is the result of addn. of 1 mol. of the alkaloid and 1 mol. of Mayer's reagent. It is possible to det. by this procedure amts. of strychnine as small as 0.2 mc.</p>		<p>10</p>	
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>		<p>12-1-41</p>	
<p>FROM: 517-02119</p>		<p>11-1-41</p>	
<p>517-02119</p>		<p>11-1-41</p>	

<p>BARICH, S. K. CA</p>		<p>17</p>	
<p>Electrodialysis as a method for isolation of alkaloids from plant raw materials and other sources. S. Kh. Barich. <i>Zhur. Priklad. Khim.</i> (J. Applied Chem.) 20, 652, 9(1947).—In an electrodialysis cell, with parchment membrane, graphite walls as electrodes, chamber capacity 350 ml., preliminary expts. on solns. of pure strychnine and brucine showed an essentially completed process in 30 min. with 140 v. at 0.1 amp., with 0.21% initial alkaloid concn. In expts. in which ground plant matter was mixed with 200 ml. H₂O and electrodialyzed as above, the alkaloids were found in the cathodic compartment and the highest concn. was observed within 10-60 min. with cinchona bark, ipecacuanha, and poppy; tea showed very slow alkaloid transfer (incomplete even in 4 hrs.). Henbane, nux vomica, ergot, and ragweed were intermediate. Definite migration to the cathode compartment was observed for brucine, ergotoxin, ergometrine, quinine, cinchonine, cinchonidine, narrotine, papaverine, pseudoephedrine, seneciphylline, aconitine, and caffeine. A few quant. expts. showed over 30% extn. of caffeine from tea dust by 0.22-0.29 amp. in 4.5 hrs. and essentially complete extn. of alkaloid complement of ipecacuanha, nux vomica, etc., in 2.5-3.5 hrs. at 55-140 v. and 0.1-0.25 amp. (with 5-g. plant samples). The process is much faster than other methods of extn. G. M. Kosolapoff</p>			
<p>ASB-554 METALLURGICAL LITERATURE CLASSIFICATION</p>			

A.C. BABICH, S. Nn.

144. Electrolytic separation of alkaloids for their qualitative and quantitative determination. S. Nn. Babich (*J. anal. Chem., USSR*, 1961, 8, 834-839). Many alkaloid bases can be separated electrolytically on the cathode in a cryst. form. Separations from complex mixtures can be made without using acids, alkalis, or org. solvents. For qual. purposes nitrates of strychnine and brucine, hydrochlorides of morphine, its methyl-, ethyl-, and diacetyl-derivatives, cocaine, quinine, emetine, lobeline, scopolamine, and ephedrine; hydrobromides of homatropine, and atropine sulfate; and barbitone acetate were electrolyzed in aq. solution (concn. 0.001-1%), using Pt, steel, and C electrodes and also an Al anode in a parchment envelope and a steel cathode, with immersed areas of 180 sq. mm. in 10 ml. of solution, a distance between the electrodes of 30 mm., and applied voltages of 0.5-25 v. In most cases the bases started to separate immediately on the cathode, and the crystals had the m.p. of the pure compounds. Methyl- and ethyl-morphine yielded no deposit, owing to their high solubility in water. Experiments on the determinations were carried out with Al and steel electrodes. The rate of separation depends on the voltage: e.g., at 10 v., 71-87 mg. of morphine were deposited in 240 min., and at 25 v., 70-83 mg. were deposited in 60 min., and is considerably increased by addition of NaCl. Practically theoretical results were obtained with all the alkaloids examined: e.g., brucine nitrate (10 g. of 1% solution, complete deposition at 45 v. in 30 min.), ephedrine (45 v., 2.5 hr.), morphine (25 v., 60 min.), strychnine (45 v., 90 min., but with NaCl 25 v., 30 min.). G. S. SMITH.

PHARMACEUTICAL, S. K.

Electrochemistry

Decomposition potentials of alkaloid salts and potentials of separation of alkaloids from their salts. S. Kh. Halach (Irkutsk State Med. Inst.), 24th Paklad. Khim. (I. Applied Chem.) 28, 74 (1955). Measurements of the decomposition potential E_d (by the point of inflection of the current-voltage curves) and of the potential E_s corresponding to 1st visible separ. of crystals of the alkaloid, were made at 20° on 0.025 N aq. solns. of hydrochlorides of morphine, methylnorphine, ethylnorphine, diacetylmorphine, cocaine, quinine, emetine, salutarin, ephedrine, lobeline, papaverine, picrocarpine; strychnine nitrate; atropine sulfate; physostigmine salicylate, on electrodes of Pt, Hg, Ag, Cu, Pb, Ni, Cd, Fe, Zn, Al, steel, and C. These measurements

were compared with data of E_d of NH_4Cl at the same concn. For strychnine nitrate, on Pt, $E_d = 2.3$ v., very close to 2.25 v. for NH_4Cl . In both instances, with Pt anodes, E_s is highest on cathodes of Cu and Hg. The values of E_s are always close to E_d , e.g., for strychnine nitrate on Pt cathodes, $E_d = 2.3$ and $E_s = 2.7$ v.; with a Pt anode and a Hg cathode, $E_d = 2.7$ and $E_s = 2.9$ v. For all the alkaloids investigated, E_d is close to that of NH_4Cl and, with Pt anodes, it has the highest value on Cu and Hg cathodes, and the lowest on Al (anode), steel (cathode) and on Al (anode) - Pt (cathode). With the concn. of the alkaloid salt decreased from 0.025 to 0.001 N, or with increasing cathodic c.d., E_d first decreases, then rises. S. Then

Chin. Pharmaceutical Chem.,

1. BABICH, S. KH. ; SOLOVYEV, N. V.

2. USSR (600)

4. Drugs

7. Storing medicines.
Apt. delo. No. 5. 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953, Unclassified.

CA ENEICH, S. K.

2

Electrical conductivity of solutions of salts of alkaloids.
S. Kh. Babich and K. A. Strakhova. *Zhur. Priklad. Khim.*
(J. Applied Chem.) 25, 307-19 (1952).—Conds. of morphine-
HCl, methylmorphine-HCl, ethylmorphine-HCl, diacetyl-
morphine-HCl, quinine-HCl, salutarine-HCl, ephedrine-HCl,
emetine-HCl, papaverine-HCl, cocaine-HCl, pilocarpine-
HCl, atropine-H₂SO₄, strychnine-HNO₃, physostigmine
salicylate, and methylmorphine base indicate that the sp.
conds. of the salts approaches that of strong inorg. binary
electrolytes, which makes possible electrolysis of such salts.

at rather high c.d. The sp. conds. of the free alkaloids is
very much lower than that of the salts. G. M. K.

BABICH, S. Kh,

Chemical Abst.

Vol. 48 No. 9

May 10, 1954

General and Physical Chemistry

Electrical conductivity of solutions of salts of alkali.
S. Kh. Babich and K. A. Shukhova. *J. Appl. Chem.*
USSR, 25, 219-220 (1952) (Engl. translation). See C.A.B.
46, 6470.

9-3-54
JH

AKHUNDOV, I.I.; BABICH, S.Kh.; TEGISBAYEV, Ye.T.

Sergosin kidney function test. Report No.1. Zdrav. Kazakh. 21
no.11:27-31 '61. (MIRA 15:7)

1. Iz kafedry urologii (zav. - prof. Z.V. Faynshteyn) i
kafedry farmatsevticheskoy khimii (zav. - dotsent S.Kh. Babich)
Kazakhskogo meditsinskogo instituta.
(KIDNEY--DIAGNOSIS)

BABICH, S.Kh.

Electrolytic extraction of active substances from medicinal plants.
Trudy Inst.bot.AN Kazakh.SSR 17:195-198 '63. (MIRA 17:3)

BABICH, S.KH.; BAKENOVA, M.

Effective principles of valerian root. Apt. de'o 11 no.5:69-71
S-0 '62. (MIRA 17:5)

1. Kazakhskiy meditsinskiy institut.

BABICH, S.Ye.

Burning through a solidified tap-hole with the aid of an electrode.

Lit. proizv. no. 5:30 My '55

(MLRA 8:6)

(Founding)

BABICH, V. [Babych, V.]

Our women scientists. Nauka i zhyttia 8 no.3:6-8 Nr '58.
(MIRA 12:9)

(Women in science)

TARUSHKIN, P.; BABICH, V., inzh.

A critical evaluation of assembly units and joints in multistory industrial buildings. Prom.stroi. i inzh. soor. 4 no.4:19-21
Jl-Ag '62. (MIRA 15:9)

1. Glavnyy tekhnolog tresta "Dneprostal'konstruktsiya" (for Tarushkin).
(Industrial buildings) (Precast concrete construction)

TARUSHKIN, P.; BABICH, V., inzh.

Introduction of new equipment into construction and assembly work.
Prom. stroi. i inzh. soor. 5 no.3:10-13 My-Je '63.

(MIRA 16:7)

1. Glavnyy tekhnolog tresta "Dneprostal'konstruktsiya" (for
Tarushkin).

(Building—Technological innovations)

BABICH, V.A., inzh.; KUDLO, M.M., inzh.

New design of the housing of the front bearing of TMZ steam turbines. *Energomashinostroenie* 9 no.11:41 N '63. (MIRA 17:2)

BABICH, V.A., inzh.

Improved holder for compressed air and arc planing of metals.
Mont. 1 spets. rab. v stroi. 23 no.12:23-24 D '61.

(MIRA 15:2)

(Planing machines)

KOVALEVSKIY, M.M., inzh.; REVEIN, B.S., inzh.; GORSHKOV, V.N., inzh.; BABICH,
V.A., inzh.

The GT-6-750 TMZ gas turbine system. Energomashinostroenie 11 no.7:
8-12 J1 '65. (MIRA 18:7)

BABICH, V.A., inzh.; SEMENOV, A.G., inzh.

Modernization of a PP-1 portable gas-cutting machine. Svar.
proizv. no.2:34-35 F '62. (MIRA 15:2)

1. Tsontral'naya proizvodstvenno-issledovatel'skaya svarochnaya
laboratoriya Litovskogo sovnarkhoza.
(Gas welding and cutting—Equipment and supplies)

BABICH, V.A., inzh.

Improved holder for the air-arc cutting of metals. Sudostroenie
28 no.8:50-51 Ag '62. (MIRA 15:8)
(Electric metal cutting)

ACCESSION NR: AP4022200

S/0028/64/000/002/0034/0038

AUTHOR: Babich, V. F.

TITLE: Devices for measuring parameters of polymer materials in a deformed state

SOURCE: Standartizatsiya, no. 2, 1964, 34-38

TOPIC TAGS: polymer material, polymer material deformation, parameter deformation measuring device, deformation measuring device complex, tensile strength, stress relaxation

ABSTRACT: The application of equations establishing the relation between stress, deformation, time, and temperature has been facilitated by a complex of devices developed by the Chemical Physics Institute of the Academy of Sciences. These devices measure polymer material parameters in a deformed state under the following test conditions: 1) deformation at a constant rate, 2) deformation under constant stress, 3) stress relaxation under a given constant deformation, and 4) deformation relaxation after load removal. The complex setup (see enclosure 01) consists of electromotor 1 which rotates worm pair 3 through a reducer and brings load bearing screw 2 into

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ACCESSION NR: AP4022200

motion. The load bearing screw deforms polymer sample 7 fixed at one end in clamp 8 of dynamometer 9 and fixed at the other end in clamp 5 of universal joint 4 in which load bearing screw 2 ends. Signals from deformation pickup 6 placed on test sample 7 are recorded by potentiometer EPP-09 of deformation recorder 11. Signals from dynamometer 9 are recorded by the EPP-09 of load recorder 12. Clamps 5 and 8 and test sample 7 are all located in thermostat 10. Temperature is measured, controlled, and recorded by electronic control 13 with a thermocouple temperature pickup. Methods of determining polymer material parameters under different conditions are described. Orig. art. has: 5 figures.

ASSOCIATION: None.

SUBMITTED: 00

ENCL: 01

SUB CODE: MT

NR REF SOV: 012

OTHER: 003

Card 2/3

Standard 17:12: MIL-STD-17:12

Use of high-strength glass-reinforced plastic with uncoated base.
Standardization 28 no. 5:48-49 My '61. (MIL-STD 17:12)

L 21252-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6008397

(A)

SOURCE CODE: UR/0374/66/000/001/0003/0006

AUTHOR: Babich, V. F.; Sivergin, Yu. M.; Berlin, A. A.; Rabinovich, A. L. 49

ORG: Institute of Chemical Physics AN SSSR, Moscow (Institut khimicheskoy fiziki AN SSSR, Moskva) 8

TITLE: Correlation between the equilibrium modulus of high elasticity and the number of cross-links in rigid network structure polymers 15

SOURCE: Mekhanika polimerov, no. 1, 1966, 3-6

TOPIC TAGS: crosslinking, polymer structure, elastic modulus, temperature dependence, temperature effect, equilibrium

ABSTRACT: The dependence of the equilibrium modulus of the high elasticity of polymers of olygoesteracrylates on temperature was investigated. The modulus was shown to increase with the raising temperature. It was determined that the higher the extent of cross-linking, the lower the correlation of experiment with theory concerned. Orig. art. has: 4 figures, 3 formulas, and 1 table. [Based on authors' abstract.] [NT]

SUB CODE: 11, 20/SUBM DATE: 17Jul65/ ORIG REF: 004/ OTH REF: 003/

Card 1/1 BLG

UDC: 678:539.32

L 15036-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6003952

SOURCE CODE: UR/0374/65/000/005/0149/0151

AUTHOR: Babich, V. F. (Moskva); Rabinovich, A. L. (Moskva)

ORG: none

TITLE: Elastic component of deformation in cross-linked polymers

SOURCE: Mekhanika polimerov, no. 5, 1965, 149-151

TOPIC TAGS: polymer, elasticity, elastic deformation, tensile stress, durability, cross linked polymer, temperature dependence, chemical composition, elastic modulus

ABSTRACT: With the use of the method of instantaneous unloading it is shown that the value of the elastic deformation in cross-linked polymers is determined by tension and is linearly dependent on stress and temperature. It is independent of the value of general deformation, the duration of stress (loading) and the prehistory of the sample. The value of Hooke's modulus is defined by the chemical composition of the polymer and is independent of its structure. Authors thank Ya. D. Avrasin and Yu. M. Sivergin for the courteous delivery of polymers. Orig. art. has: 4 figures. [Based on author's abstract]

SUB CODE: 11/ SUBM DATE: 11Apr65/ ORIG REF: 007/

Card 1/1

UDC: 678:531.02.531.096

BABICH, V.G.; MALAKHOV, Ye.S.

Therapy of lumbago and ischioradiculitis with internal administration
of novocain, Sovet. med. no.2:41 Feb 52. (CIML 21:5)

1. Kiev Oblast.

TABICH, V. I. (Institute on use of gas of Academy of Sciences of Ukrainian SSR)

"New investigations of heat exchange during burning of natural gas and devices developed for optimizing burning of torches."

Report presented at the Section on Physics of Combustion, Scientific Session, Council of Acad. Sci. Ukr SSR on High Temperature Physics, Kiev, 2-4 Apr 1963.

Reported in Teplofizika Vysokikh temperatur, No. 2, Sep-Oct 1963, p. 321, JPRS 24,651. 19 May 1964.

ZAKHARIKOV, N.A. [deceased], doktor tekhn.nauk; PIORO, L.S.,
kand.tekhn.nauk; BABICH, V.I., inzh.; TESSEL'SKIY, G.A.,
inzh.; NIKOLAYEV Ye.I., inzh.; OBLIVAL'NIY, F.A., inzh.;
VAYNSHTEYN, A.L., inzh.; LUSHIN, L.A., inzh.

New device for the control of gas combustion in glass tank
furnaces. Stek. i ker.21 no.9:5-6 S '64 (MIRA 18:4

1. Institut gaza AN UkrSSR (for Zakharikov, Pioro, Babich,
Tessel'skiy, Nikolayev. 2. Lisichanskiy stekol'nyy zavod
(for Oblival'nyy, Vaynshteyn, Lushin).

SOV/137-58-7-15339 D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 200 (USSR)

AUTHOR: Babich, V.K.

TITLE: Study of the Process of Annealing of Quenched and Cold-worked Steel (Izucheniye protsessov otpuska zakalennoy i kholodnode-formirovannoy stali)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Dnepropetr. metallurg. in-t (Dnepropetrovsk Institute of Metallurgy), Dnepropetrovsk, 1957

ASSOCIATION: Dnepropetr. metallurg. in-t (Dnepropetrovsk Institute of Metallurgy), Dnepropetrovsk

1. Steel--Heat treatment

Card 1/1

SOV/137-58-10-21510

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 149 (USSR)

AUTHORS: Starodubov, K. F., Babich, V. K.

TITLE: On the Nature of Processes Occurring in the Third Stage of Tempering (O prirode protsessov, protekayushchikh v tret'yey stadii otpuska)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Chernaya metallurgiya, 1958, Nr 2, pp 133-142

ABSTRACT: The process of tempering of hardened cold-worked steel containing 70% C was studied together with the process of tempering of technically pure commercial iron (0.09% C). Deformation of the steel was accomplished by means of drawing. After quench-hardening or deformation, the specimens were tempered at temperatures ranging from 20 to 675°C. Type II distortions were determined together with the dimensions of blocks, the σ_b and δ values, and the magnitude of coercive force. It was established that the δ of tempered steel is reduced and the σ_b slightly increased after the steel had been tempered at a temperature of 375-475°. It is assumed that the increase in tensile strength is attributable

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On the Nature of Processes Occurring in the Third Stage of Tempering

to the following factors: a) Disintegration of α -phase blocks during disruption of cohesion in lattices of carbide and α phase; b) relief of elastic stresses through secondary plastic slips; c) occurrence of an initial recrystallization stage during processing of the solid α solution. In order to exclude the effect of cohesion in the carbide and α -phase lattices, the process of tempering of a cold-worked steel wire was studied. It is established that the elastic stresses occurring during annealing may be relieved by the action of secondary plastic slips under conditions of increased plasticity at elevated temperatures. The coercive force is determined from the magnitude of the blocks and is but slightly dependent on the elastic distortions of the crystal lattice.

1. Steel--Phase studies 2. Steel--Deformation 3. Steel--Heat Ye. S.
treatment 4. Steel--Mechanical properties

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15.11.1958, 12.11.1958
AUTHOR: None Given

129-58-8-15/16

TITLE: Dissertations (Dissertatsii)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 8,
p 63 (USSR)

ABSTRACT: For the Degree of Candidate of Technical Sciences:
Babich, V. K. "Study of the Processes of Tempering of
Hardened Steel and of Steel Deformed in the Cold State
(Izucheniye protsessov otpuska zakalennoy i
kholodnodeformirovannoy stali). Dnepropetrovsk, 1957,
Dnepropetr. metallurg. in-t im. I. V. Stalina
(Dnepropetrovsk Metallurgical Institute imeni I.V.Stalin);
A. A. Vorob'yev, A. A. "Investigation of the New
Technology of Strengthening by Surface Work Hardening"
(Issledovaniye novoy tekhnologii uprochneniya
poverkhnostey naklepom), Leningrad 1957, Leningr.
politekhn. in-t (Leningrad Polytechnical Institute);
B. Ye. Galinkin "Corrosion Stability of Cast Iron as a
Function of Certain Methods of its Treatment"
(Korrozionnaya stoykost' chuguna v zavisimosti ot
nekotorykh metodov yego obrabotki), Voronezh, 1956,
Gruz. politekhn. in-t (Georgia Polytechnical Institute);

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. Dissertations

129-58-8-15/16

Dobrovol'skiy, S. I. "Elucidation of the Possibility of Studying the Stresses During Plastic Deformation by Illuminating Transparent Models with Polarised Light" (Vyyasneniye vozmozhnosti izucheniya napryazheniy pri plasticheskoy deformatsii putem prosvechivaniya prozrachnykh modeley polyarizovannym svetom), Minsk, 1957, AN SSSR, In-t metallurgii im. A. A. Baykova (Ac. Sc. USSR, Institute of Metallurgy imeni A. A. Baykov);
 G. F. Lepin "Investigation of Certain Relations of Creep and Relaxation Phenomena in Metals" (Issledovaniye nekotorykh zakonemernostey svyazi yavleniy polzuchesti i relaksatsii napryazheniy v metallakh), Moscow, 1957, AN SSSR, In-t metallurgii im. A. A. Baykova (Ac. Sc. USSR, Institute of Metallurgy imeni A. A. Baykov);
 Loginov, P. I. "Investigation of the Influence of Short Duration Over-loads of the Resonance Type on the Fatigue Strength of Structural Steel" (Issledovaniye vliyaniya kratkovremennykh peregruzok rezonansnogo tipa na ustalostnuyu prochnost' konstruktsionnoy stali), Leningrad, 1957, Leningr. politekhn. in-t im. M. I. Kalinina
 Card 2/6 (Leningrad Polytechnical Institute imeni M. I. Kalinin) ;

Dissertations

129-58-8-15/16

M. S. Polyak "Seeking of New High Speed Facing Alloys of Increased Stability and Establishment of a Rational Facing Technology" (Izyskaniye novykh bystrorezhushchikh naplavochnykh splavov povyshennoy stoykosti i ustanovleniye ratsionnal'noy tekhnologii ikh naplavki), Tbilisi, 1957, Gruz. politekhn. in-t im. S. M. Kirova (Georgia Polytechnical Institute imeni S. M. Kirov); Yu. A. Preobrazhenskaya "Micro-structural Deformation and Influence of the Deformations on the Heat Resistance" (Mikro-strukturnyye deformatsii i vliyaniye deformatsii na zharoprochnost') Moscow, 1957, Mosk. in-t tsvet. metallov i zolota im. M. I. Kalinina (Moscow Institute of Non-Ferrous Metals and Gold imeni M. I. Kalinin);

For the Degree of Candidate of Physico-Mathematical Sciences: Bykovskiy, Yu. A. "Investigation of the Photomagnetic Effects in Germanium" (Issledovaniye fotomagnitnykh effektov v germanii), Moscow, 1957, Mosk. inzh. fiz. in-t (Moscow Engineering-Phys. Institute);

Ye. L. Gal'perin "Changes of the Crystal Structure of Steel During Cold Treatment and During Heat Treatment"

Card 3/6 "Izmeneniye kristallicheskoy struktury stali pri kholodnoy

Dissertations

129-58-8-15/16

i termicheskoy obrabotke, Leningrad, 1957, Leningr. ped. in-t im. A. I. Gertsena. Kafedra obshchey fiziki (Leningrad Pedagogical Institute imeni A. I. Gertsen. Chair of General Physics);
 A. V. Grin' "Investigation of the Phenomena of Non-Elasticity in α -solid Solutions of Aluminium with Magnesium" (Issledovaniye yavleniya neuprugosti v al'fa-tverdykh rastvorakh alyuminiya s magniyem), Sverdlovsk, 1957, AN SSSR, Ural'skiy filial (Ac. Sc. USSR, Ural Branch);
 D. N. Karlikov "Near Order and Viscosity of Liquid Amalgams of Cadmium and Zinc" (Blizhniy poryadok i vyazkost' zhidkikh amal'gam kadmiya i tsinka), Kiyev, 1957, Kiyevskiy gos. universitet im. T. G. Shevchenko (Kiyev State University imeni T. G. Shevchenko);
 O. G. Karpinskiy "Residual Stresses After Grinding of Metals" (Ostatochnyye napryazheniya posle shlifovaniya metallov), Moscow, 1957, Mosk. inzh.-fiz.in-t (Moscow Engineering-Phys. Institute);

For the Degree of Candidate of Chemical Sciences:

I. K. Marshakov "Investigation of the Mechanism of Slot Corrosion of Metals" (Issledovaniye mekhanizma "shohhelevoy

Dissertations

129-58-8-15/16

korrozii" metallov), Voronezh, 1957, AN SSSR. In-t fizicheskoy khimii (Ac. Sc. USSR, Institute of Physical Chemistry);

Molodtsova, K. A. "Complex Compounds of Platinum with Acetylene Derivatives in the Internal Sphere and Some of Their Properties" (Kompleksnyye soyedineniya platiny s atsetilenovymi proizvodnymi vo vnutrenney sfere i ikh nekotoryye svoystva), Leningrad, 1957, Leningr. ped. in-t im. A. I. Gertsena (Leningrad Pedagogical Institute imeni A. I. Gertsen);

B. I. Nabivanets "Study of the Complex Compounds of Mo in the Solution" (Izucheniye kompleksnykh soyedineniy molibdena v rastvore), Kiyev, 1957, AN Ukr.SSR, In-t obshchey i neorganicheskoy khimii (Ac. Sc. Ukr. SSR, Institute of General and Inorganic Chemistry);

G. A. Tedoradze "Study of the Kinetics of Oxidation of Chlorine Ions and Ionisation of Molecular Cl on platinum" (Izucheniye kinetiki okisleniya khlora na platine), Moscow, 1957, MGU im. M. V. Lomonosova. Kafedra elektro-khimii (Moscow State University imeni M.V.Lomonosov. Chair of Electro-chemistry);

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. Dissertations

129-58-8-15/16

L. V. Petrova "Synthesis of α -, β -unsaturated ketones, β -chlorketones, diketones and ketoxides in Presence of Metal Halogenides" (Sintez α -, β -nepredel'-nykh ketonov, β -khlorketonov, diketonov i ketokislov, v prisutstvii galogenidov metallov), Moscow, 1957, AN SSSR, In-t organich. khimii im. N. D. Zelinskogo (Ac. Sc., USSR, Institute of Organic Chemistry ineni N. D. Zelinskiy)

1. Metallurgy--USSR

Card 6/6

S/137/62/000/001/212/237
A154/A101

AUTHORS: Starodubov, K. F., Babich, V. K.

TITLE: Investigation of the tempering processes of hardened and cold-worked steel

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 97, abstract 11694 ("Nauchn. tr. Dnepropetrovsk. metallurg. in-t". 1958, no. 36, 43 - 58)

TEXT: The method of X-ray analysis was used to study the causes of reduction in ductility and slight increase in strength when tempering at 300 - 500°C the hardened and cold-worked "70" steel and deformed commercial Fe (0.09% C). The steel "70" was worked by drawing after patenting, and the commercial Fe - after annealing at 800°C. Tempering was carried out at 100 - 675°C in a vacuum. X-ray structural analysis revealed the width of the line (211), size of the domains D and 2nd-order distortion of the crystal lattice $\Delta a/a$. It was established that when tempering hardened "70" steel at 375 - 475°C, δ slightly decreased with an increase of the tempering temperature, and the rate of reduction of σ_b decreased. This was accompanied by an increase of H_c and breaking-up of the α -phase domains.

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When tempering the worked wire within a given temperature range, increase of H_c , reduction of the increase of δ and a drop in σ_b were also observed; refinement of the α -phase domains also took place. The tempering temperature at which these phenomena occur is lower and the intensity of the effect the greater, the greater is the degree of deformation. When tempering deformed commercial Fe analogous phenomena were also observed, but the effect was considerably less than in the case of steel "70". The tempering temperature ranges in which the described phenomena occur coincide for both steel "70" and the commercial Fe. This proves that the anomalous change in properties upon tempering is not connected with recrystallization in the working, since its temperature depends considerably on the C content. The reduction of δ and the slight increase of σ_b when tempering cold-worked steel in a temperature range of 300 - 550°C may thus be explained by refinement of the α -phase domains caused by plastic shifts in the microregions. 2nd-order distortions up to tempering temperatures of 350 - 375°C are greater in hardened steel than in worked steel; at higher tempering temperatures the 2nd-order distortions are about the same in hardened and greatly-deformed steel. In slightly deformed steel > 425°C the elastic distortions remain greater, so that the α -phase domains are broken up at higher temperatures. Since an increase of

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A154/A101

the C content in hardened steel is accompanied by an increase of the 2nd-order lattice distortions, a shift of the temperature range of the anomalous change in properties towards the lower tempering temperatures should be observed. The anomalous change in properties taking place upon tempering cannot be explained by carbide transformation, since it occurs not only in hardened steel, but also in cold-worked steel. There are 9 references.

N. Kalinkina

[Abstracter's note: Complete translation]

Card 3/3

18(3), 18(7)

SOV/163-59-1-28/50

AUTHORS: Starodubov, K. F., Babich, V. K.

TITLE: Variation of Coercive Force Due to Deformation of Patent Steel (Izmeneniye koertsitivnoy sily pri deformatsii patentirovannoy stali)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 151 - 153 (USSR)

ABSTRACT: The patent process (hardening and subsequent quenching in liquid metals) leads to a certain heterogeneity of the sub-microscopical structure of steel. The investigation covered the carbon steels 70 and 50 with a carbon content of 0.7 and 0.5%. The coercive force was measured on the coercimeter of the type due to I. V. Radchenko (Ref 1). The deformation was produced by drawing on finish draw benches. The patent process increases the coercive force. It was, however, shown by the investigation that the coercive force increases only for small deformations. If deformation exceeds 33% the coercive force drops again. The experiments showed that the decrease of coercive force due to a deformation of patent

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Variation of Coercive Force Due to Deformation of Patent Steel SOV/167-59-1-28/50

steel cannot be explained by the heating of the steel in the zone of deformation. The variation of the coercive force due to deformation is a phenomenon similar to that of the variation of the ratio of the intensities of the X-ray interference lines due to a deformation of patent steel, which has been described in the paper cited by reference 2. The experiments lead to the conclusion that the factors causing an increase of the dynamic distortions in the crystal lattice of the α -phase exert a strong influence upon the coercive force. Hardened steel may serve as an example. In such a steel the binding forces are greatly reduced due to the presence of carbon in the martensite lattice and hence a correspondingly high coercive force is observed. There are 1 figure and 2 Soviet references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskii institut (Dnepropetrovsk
Institute of Metallurgy)
SUBMITTED: October 24, 1957

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18(3), 18(7)

AUTHORS: Starodubov, K. F., Sazonova, A. A., SOV/163-59-1-44/50
Babich, V. K.

TITLE: Influence of Hardening and of Drawing Upon the State of the Fine Crystal Structure of Steel (Vliyaniye zakalki i otpuska na sostoyaniye tonkoy kristallicheskoy struktury stali)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 230-232 (USSR)

ABSTRACT: This is an investigation of 55S2 steel. The temperature of the hardening bath was chosen in such a way so that a different initial structure was obtained for the drawing process. Thus the investigation covered ferrite-zementite structures, which at a temperature of 400-650° are composed either of austenite, or of martensite, needle-shaped troostite, or of a mixture of these components. The methods and procedures used in this investigation are briefly described. The results of the investigation of the modification of the grain sizes and of the distortions of second order in the alpha phase of the crystal lattice show that the dimensions of the domains of coherent scattering of X-rays (D) and the distortions of second order

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($\frac{\Delta a}{a}$) exhibit marked differences after different heat treatment. The structure obtained by a hardening and drawing treatment exhibits smaller grains and larger distortions of second order than the structure obtained by a direct decomposition of the austenite. The curves given in figure 2 for the structures which were subjected to drawing after hardening with isothermal transformation take an intermediate course between the two curves mentioned previously. In all cases the distortions of second order are greatly reduced at drawing temperatures of 400-500°. $\frac{\Delta a}{a}$, on the contrary, is at these temperatures much greater in hardened and drawn samples than in samples treated isothermally. If the drawing temperature or the temperature of isothermal decomposition of austenite does not exceed 500° the grain size varies only negligibly with the conditions of the heat treatment. If, however, drawing is carried out at temperatures exceeding 500°, the grain size varies with varying conditions of the heat treatment. After an isothermal treatment at 550° there appear interference spots

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which indicate a recrystallization. If martensite has been drawn at temperatures of up to 600° no recrystallization of the ferrite was observed. On the strength of these X-ray structural analyses of steel it can be concluded that the recrystallization of ferrite in steel 55S2 proceeds after phase solidification with a marked intensity in different temperature intervals. This depends upon the fact whether the ferrite was produced immediately from austenite by isothermal transformation at temperatures exceeding 300° or by way of a martensite structure due to drawing. There are 2 figures and 3 Soviet references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk
Institute of Metallurgy)

SUBMITTED: October 24, 1957

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STARODUBOV, K.F.; SAZONOVA, A.A.; BABICH, V.K.

Effect of hardening and tempering on the fine crystal structure
of steel. Nauch.dokl.vys.shkoly; met. no.1:230-232 '59.
(MIRA 12:5)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Steel--Metallography)

STARODUBOV, K.F.; BABICH, V.K.; GASIK, L.I.

Changes in mechanical properties during steel wire drawing.
Izv. vys. ucheb. zav.; chern. met. 4 no,11:155-158 '61.

(MIRA 14:12)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Wire drawing)

S/126/61/012/005/021/028
E040/E435

AUTHORS: Starodubov, K.F., Babich, V.K., Siukhin, A.F.,
Gasik, L.I.

TITLE: Changes in plasticity of cold-drawn wire during its
annealing in the temperature range of 300 to 600°C

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.5, 1961,
765-768

TEXT: Changes in plasticity properties of St 50 steel were investigated at the Dnepropetrovskiy Metallurgical Institute by determining the relative elongation and reduction in cross-section area of vacuum-annealed specimens held for 1, 5, 10, 15 and 30 min at temperatures in the range of 300 to 600°C. After annealing, the specimens were examined by X-rays (interference lines from (110) and (220) planes). Tests were also made on cold-worked specimens at 61.6 and 87.5% deformation. Relative elongation was found to increase with increasing temperature of annealing with a maximum of 6 to 7% corresponding to annealing temperatures within the range of 300 to 350°C. A further increase of the annealing temperature (up to 550°C) and specimen holding for
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E040/E435

periods of 1 to 60 min has no effect on the relative elongation whose value remains constant for a given degree of cold-working. When the specimen deformation was increased from 61.6 to 87.5% the relative elongations dropped by an approximately constant value in comparison with those given by non-deformed specimens. Identical values of the relative elongation of specimens subjected to the two degrees of deformation were obtained after annealing at 600°C. On the other hand, values of the reduction in specimen cross-section area drop sharply with increasing degree of deformation. The curve of reduction in area vs annealing temperature passes through a minimum corresponding to 450 to 550°C, depending on the duration of specimen holding at a given temperature. This is explained as being due to diffusion processes, which reduce the permissible distortion of the crystal lattice and result in a reduction of strength. A significant weakening of the background intensity in X-ray diagrams is regarded as confirming the above conclusions. It is postulated that the observed reduction in the plasticity of steel during annealing is the consequence of a breakdown of the grain and block

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boundaries caused, in its turn, by their penetration by dislocations and also by a non-uniform distribution of the dislocations in the sub-grains volume (polygonization). The increase in plasticity of the steel observed at temperatures exceeding 500°C is ascribed to the onset of recrystallization. G.V.Kurdyumov and L.I.Lysak are mentioned in connection with their contributions in this field. There are 5 figures and 3 Soviet-bloc references.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

SUBMITTED: January 29, 1961

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STARODUBOV, K.F.; BABICH, V.K.; SIUKHIN, A.F.; GASIK, L.I.

Changes in plasticity during the tempering of cold-drawn wire in the 300-600° temperature range. Fiz. met. i metalloved. 12 no.5:765-768 N '61. (MIRA 14:12)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Wire drawing)
(Tempering)

STARODUBOV, K.F., akademik; BABICH, V.K., kand.tekhn.nauk

Hardening of cold-drawn wire during low-temperature tempering.
Trudy Inst. chern. met. AN URSR 18:75-81 '62. (MIRA 15:9)

1. Akademiya nauk UkrSSR (for Starodubov).
(Wire drawing) (Tempering)

BABICH, V.K., kand.tekhn.nauk

Hardening during the cold plastic deformation of steel. Trudy
Inst. chern. met. AN URSS 18:82-85 '62. (MIRA 15:9)
(Steel--Hardening)

RAFALOVICH, TS.N., kand.tekhn.nauk; BABICH, V.K., kand.tekhn.nauk

Investigating the rapid annealing of cold-rolled sheet steel.

Sbor. trud. TSNIICHM no.28:40-48 '62. (MIRA 15:11)

(Annealing of metals) (Sheet steel)

STARODUBOV, K.F., akademik, BABICH, V.K.; SIUKHIN, A.F. [Siukhin, O.F.]

Nature of processes occurring during the quenching of hardened low-carbon steel. Dop. AN URSSR no. 12:1590-1593 '64. (MIRA 18:1)

1. Dnepropetrovskiy metallurgicheskiy institut. 2. AN UkrSSR (for Starodubov).